

DOCUMENTED CHROMOSOME NUMBERS 1996:2. MISCELLANEOUS U.S.A. AND MEXICAN SPECIES, MOSTLY ASTERACEAE

ZAIMING ZHAO

*Department of Botany
University of Texas
Austin, TX 78713, U.S.A.*

ABSTRACT

Chromosome counts are reported for over eighty collections of flowering plants from the U.S.A. and Mexico, representing 59 species in 39 genera of 10 families.

RESUMEN

Se presentan recuentos cromosómicos de más de ochenta recolecciones de plantas con flores de U.S.A. y México, pertenecientes a 59 especies, de 39 géneros, de 10 familias.

The following chromosome counts (Table 1) are documented by specimens deposited at the herbarium of the University of Texas, Austin (TEX). Previously uncounted taxa are marked by an asterisk(*). A double asterisk(**) indicates a new number for the species. Fedorov (1969) and the standard indices of plant chromosome numbers published since that opus (through 1991:cf.introduction, Goldblatt & Johnson 1994) were consulted to ascertain previous counts for the taxa concerned.

METHODS

Chromosome counts were made from pollen parent cells from floral bud material collected in the field and fixed in a modified Carnoy's solution(4:3:1; chloroform, absolute ethanol, glacial acetic acid), using standard squash procedures.

DISCUSSION

Astranthium.—DeJong (1965) reported the base chromosome numbers of this genus to be $x=3$, 4, and 5. His counts for *A. splendens* ($2n=18$) are hexaploid. My counts of this species are $2n=12$ and $2n=24$, the first such counts for the species. The two counts were obtained from one head of a single plant and displayed 6 bivalents and 12 bivalents respectively.

Tradescantia.—Chromosome numbers for the five species listed in Table 1 are consistent with numbers for species of *Tradescantia* generally. Both diploidy and tetraploidy are well documented in various species of

TABLE 1. Chromosome numbers of miscellaneous U.S.A. and Mexican species, mostly Asteraceae.

Family/Species	Voucher ¹	Chromosome number(2 <i>n</i>)
ASTERACEAE		
<i>Acamptopappus sphaerocephalus</i> (Harv. & A. Gray) A. Gray	UT:Washington T 95-127	18
<i>Aphasnostephus riddellii</i> Torr. & A. Gray	TX:Duval P 1561	10
** <i>Astranthium splendens</i> De Jong	MEX:N.L. N 7468	12,24
<i>Baileya multiradiata</i> Harv. & A. Gray	UT:Washington T 95-129	64
<i>Chaetopappa bellioides</i> (A. Gray) Shinnery	MEX:N.L. N 7591	16
<i>Chaetopappa bellioides</i> (A. Gray) Shinnery	TX:Val Verde T 95-13	16
<i>Chaetopappa imberbis</i> (A. Gray) Nesom	TX:Wilson T 94-4	16
<i>Conoclinium betonicifolium</i> (Miller) King & Robinson var. <i>betonicifolium</i> Miller	MEX:Tamp. PA 7269	20
<i>Conoclinium betonicifolium</i> (Miller) King & Robinson var. <i>integrifolium</i> Patterson	MEX:N.L. T.F. PA 7404	20
* <i>Conoclinium</i> sp. nov. T.F. Patterson (in prep.)	MEX:Tamp. PA 7308 MEX:Dur. PA 7467	20 20
<i>Coreopsis wrightii</i> A. Gray	TX:Llano Z 944	24
<i>Dyssodia pentachaeta</i> (DC.) B.L. Rob. var. <i>pentachaeta</i>	MEX:Coa. N 7650 TX:Dimmit T 94-10	ca.26 ca.26
<i>Dyssodia tenuiloba</i> (DC.) B.L. Rob. var. <i>tenuiloba</i>	TX:Fayette M 1946	26
* <i>Erigeron tenuis</i> Torr. & A. Gray	TX:Liberty M 1959	7-9 II + 22-18 I
* <i>Erigeron veracruzensis</i> Nesom	MEX:Coa. N 7486	18
<i>Gaillardia aestivalis</i> (Walt.) H. Rock var. <i>aestivalis</i>	TX:Austin T 94-86 TX:Lee T 95-69	34 34
<i>Gaillardia amblyodon</i> F. Gay	TX:Burleson T 95-88	34
<i>Gaillardia pulchella</i> Fouger. var. <i>drumondii</i> Hook.	MEX:Tamp. M 1790	34
* <i>Grindelia obvatifolia</i> S.F. Blake	MEX:N.L. N 7485	12
<i>Grindelia tenella</i> Steyerm.	MEX:Tamp. N 7451 & 7452	12
** <i>Heterotheca mucronata</i> Harms ex B.L. Turner	MEX:N.L. N 7469	36
** <i>Hymenoxys linearifolia</i> Hook.	TX:Dimmit T 94-9	30,60
<i>Machaeranthera pinnatifida</i> (Hook.) Shinnery	TX:El Paso T 94-112	8
<i>Malacothrix fendleri</i> A. Gray	AZ:Apache T 95-139	14
<i>Porophyllum gracile</i> Benth.	AZ:Mohave T 95-124	48
<i>Porophyllum scoparium</i> A. Gray	MEX:Coa. N 7689	24
<i>Psilostrophe cooperi</i> (A. Gray) Greene	AZ:Mohave T 95-125	32
* <i>Rumfordia exauriculata</i> B.L. Turner	MEX:N.L. N 7737	30
* <i>Silphium simpsonii</i> Greene var. <i>wrightii</i> Perry	TX:Liberty M 1960	14
<i>Silphium gracile</i> A. Gray	TX:Lee T 95-70	14
<i>Solidago altissima</i> L.	LA:Natchitoches N 7848	36
<i>Solidago gigantea</i> Ait.	MEX:N.L. N 7739	36
<i>Solidago velutina</i> DC.	MEX:N.L. N 7740	18
* <i>Stevia lucida</i> Lag. var. <i>oaxacana</i> (DC.) Grashoff	GUA:Que. P 1512	24

TABLE 1. (continued)

Family/Species	Voucher ¹	Chromosome number(2 <i>n</i>)
<i>Thelesperma megapotamicum</i> (Spreng.) Kuntze	MEX:Coa. N 7643	40
<i>Tridax balbisoides</i> A. Gray	MEX:Tamp. M 1839	20
* <i>Verbesina mexicana</i> Cerv. ex DC.	MEX:Tamp. PA 7306	34
* <i>Verbesina zaragosana</i> B.L. Turner	MEX:N.L. H 23514	34
* <i>Xylothamia pseudobaccharis</i> (S.F. Blake) Nesom	MEX:Coa. N 7688	18
* <i>Xylothamia riskindii</i> (B.L. Turner) Nesom	MEX:Tamp. N 7697	18
BRASSICACEAE		
* <i>Streptanthus hyacinthoides</i> Hook.	TX:Leon T 95-85	28
COMMELINACEAE		
<i>Tradescantia hirsutiflora</i> Bush	TX:Bastrop T 95-56	12
	TX:Bastrop T 95-54	12,24
	TX:Robertson T 95-71	12
<i>Tradescantia humilis</i> Rose	TX:Robertson T 95-77	12
<i>Tradescantia occidentalis</i> (Britt.) Smyth.	TX:Edwards T 95-24	12
<i>Tradescantia reverchonii</i> Bush	TX:Austin T 94-78	24
	TX:Robertson T 95-76	24
	TX:Leon T 95-86	24
* <i>Tradescantia subacaulis</i> Bush	TX:Lee T 95-52,53	12
FABACEAE		
* <i>Caesalpinea</i> (<i>Hoffmanseggia</i>) <i>oxycarpa</i> Fisher	TX:Maverick T 94-19	24
* <i>Lupinus caballoanus</i> B.L. Turner	MEX:N.L. F 9,10,11	48
* <i>Lupinus platamodes</i> C.P. Smith	MEX:Tamp. M 2084	48
<i>Lupinus texensis</i> Hook.	MEX:N.L. F 8,16, 18, & 24	36
<i>Tephrosia lindheimeri</i> A. Gray	TX:Aransas T 94-64	22
HYDROPHYLLACEAE		
<i>Phacelia integrifolia</i> Torr.	TX:Garza T 95-155	ca.24
LAMIACEAE		
<i>Brazoria arenaria</i> Lundell	TX:Jim Hogg MT 24	28
	TX:Brooks MT 25	28
	TX:Kenedy MT 26	28
* <i>Calamintha arkansana</i> (Nutt.) Shinnery	TX:Burnet MT 40	22
* <i>Scutellaria ovata</i> var. <i>mexicana</i> Epling	TX:Burnet T 94-31	ca.16
LOBELIACEAE		
<i>Lobelia appendiculata</i> A. DC.	TX:Liberty M 1958	14
PAPAVERACEAE		
** <i>Corydalis micrantha</i> (Engelm.) A. Gray	TX:Guadalupe T 94-1	12

TABLE 1. (continued)

Family/Species	Voucher ¹	Chromosome number(2 <i>n</i>)
POLEMONIACEAE		
* <i>Gilia ludens</i> Shinnery	TX:Duval P 1560	18
<i>Gilia rigidula</i> Benth.	TX:Val Verde T 95-12	36
SCROPHULARACEAE		
** <i>Capraria biflora</i> L.	MEX:Tamp. W 95-45	ca.28
* <i>Capraria frutescens</i> (Mill.) Britt.	MEX:Tamp. W 95-46	ca.28

¹The letter before the collection numbers indicates the following collectors: F(Carolyn Ferguson); H(Hinton); M(Mark Mayfield); N(Guy Nesom); P(Alan Prather); PA(Tom Patterson); T(B.L. Turner); MT(Matt Turner); W(Justin Williams); Z(Zai-Ming Zhao). * = previously uncounted taxa; ** = a new number for the species.

Abbreviations for collection sites are GUA=Guatemala, MEX=Mexico, AZ=Arizona, LA=Louisiana, TX=Texas, UT=Utah, Coa.=Coahuila, Dur.=Durango, N.L.=Nuevo Leon, Tamp.=Tamaulipas, Que.=Quezaltenango. Within the U.S.A., the county is indicated; within Mexico, the state is indicated; within Guatemala, the department is indicated.

Tradescantia. In one collection of *T. hirsutiflora* from Bastrop county, Texas (T 95-54), both diploid and tetraploid pollen Parent cells were found in anthers from the same flower. Anderson (1954) reported counts of either 2*n*=12 or 2*n*=24 for various collections of *T. reverchonii*; all three collections I counted were tetraploids.

Lupinus.—The chromosome counts for *L. cabolloanus* and *L. platamodes* (2*n*=48) are consistent with most previous counts for the North American species. The four populations of *L. texensis* from Mexico are interesting in that the plants are somewhat morphologically different from populations in central Texas, and specimens of some of them were annotated as possibly new by the late Dr. D.B. Dunn. Because all of the four population I counted had 2*n*=36, a rare number for North American *Lupinus* (Turner 1994a) occurring only in the two closely related species *L. subcarnosus* Hook. and *L. texensis*, the counts reported here suggest that the Mexican populations are very closely related to the latter, if not the same.

Gilia.—Chromosome numbers in the *Gilia* sect. *Giliastrum*, to which *G. ludens* and *G. rigidula* belong, are all based upon *x*=6. Grant (1959) reported counts of 2*n*=36 for *G. rigidula*; *G. ludens* has not been counted previously and is one of only two tetraploids reported for *G. sect. Giliastrum*. All the rest are hexaploids, except for the diploid, *G. insignis* Brand (from among 9 of 17 species for which counts are now available, Turner 1994b).

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